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IN THE DISTRICT COURT OF THE FOURTH JUDICIAL DISTRICT
IN AND FOR DUCHESNE COUNTY, STATE OF UTAH

IN THE MATTER OF THE GENERAL)	
DETERMINATION OF ALL THE)	O R D E R
RIGHTS TO THE USE OF WATER,)	
BOTH SURFACE & UNDERGROUND,)	
WITHIN THE DRAINAGE AREA OF)	Civil No. 3070
THE UINTAH BASIN IN UTAH)	

The above-entitled matter is a general determination proceedings initiated pursuant to the provisions of Chapter 4, Title 73, Utah Code Annotated 1953, as amended, to adjudicate all of the rights to the use of all of the water, both surface and underground, within the drainage area of the Uinta Basin. The State Engineer is engaged in the preparation of a Proposed Determination of Water Rights for said area and one of the sources involved is the Duchesne River and it's tributaries. One aspect of this adjudication proceedings involves the duty of water which is to be allowed for irrigation uses on the Duchesne River System. That is, the quantity of water which the individual water user is to be allowed for irrigation purposes during the irrigation season. The question of duty of water has two general aspects—the quantity of water which is actually consumed by the crop during the irrigation season and the quantity of water necessary to carry

water to the plant for consumption. As to this latter aspect of water use, there are a number of users on this system receiving water from canals which divert the water from the stream and carry it, in some instances many miles, to the individual users. A dispute presently exists as to what should be considered a reasonable canal loss in transmitting the water from the point of diversion on the stream to the place of use. This problem was the subject matter of two separate hearings involving this Court and counsel for the interested parties. These hearings took place on January 4, 1972 and March 11, 1972. Attending these hearings were: Dallin W. Jensen representing the Utah State Engineer; E. J. Skeen representing Uinta Basin Irrigation Company, a corporation, Rocky Point Ditch Company, a corporation, Big Springs Power Company, a corporation, Pioneer Canal Company, a corporation, Rhoades Canal Company, a corporation, Farm Creek Irrigation Company, a corporation, New Tabby Irrigation Company, Inc. a corporation, Broadhead Ditch Company, Hicken Ditch Company, Jones Ditch Company, Turnbull Ditch Company, Melvin J. Abbott, Ed Carman, Orren Greenwood and other non-Indian users on the Duchesne River System; Edward W. Clyde representing the Central Utah Water Conservancy District; Reid Nielson representing the United States Bureau of Reclamation; and, at the latter hearing, John S. Boyden, Attorney for the Utah Indian Tribe, appeared as an observer without entering an appearance. After a review and discussion of this matter by those present, it was concluded that it would be useful and helpful in the final resolution of the question of duty of water if additional information could be obtained concerning the actual transmission losses for

the various canals on the Duchesne River System. However, after further review it became apparent that the cost of undertaking a canal loss study for every canal on the system would be prohibitive. Therefore, upon the recommendation of the State Engineer, five canals were selected for study as being fairly representative of the different types of soils and terrain which the canals on that system traverse. The canals chosen for study are: (1) Rhoades Canal; (2) Pioneer Canal; (3) Rocky Point Canal; (4) Grey Mountain Canal; and (5) Raleigh-Ivie (Petersen) Ditch. The canal loss study is to be conducted under the supervision of the State Engineer, with participation by the users or their engineers as they deem desirable. At the conclusion of the irrigation season, the State Engineer will compile the results of this study into a report for submission to the water users and the Court. An outline of how this canal loss study is to proceed has been prepared by the State Engineer and is attached hereto as Appendix "A" and by reference made a part of this Order. At the time these hearings were held, it appeared that 1972 would be a relatively good water year and, since the parties are attempting to gather additional data to aid in the resolution of the question of duty of water, now therefore it is,

ORDERED and directed that the waters of the Duchesne River System be distributed substantially as they were prior to 1971. At the request of the Court, Leo Brady, the prior Water Commissioner on the Duchesne River, and Loryn Ross, the present Water Commissioner, have prepared a distribution schedule, a copy of which is attached hereto as Appendix "B" and is by reference made

a part of this Order. The waters of the Duchesne River are to be distributed according to this schedule, Appendix "B", for the 1972 irrigation season; provided, however, that this distribution program is without prejudice to any right or claim of any of the parties. It is further ordered that the fact that the water is being distributed based upon past practices does not confirm or establish that the past practice is accurate or correct if it is subsequently determined by this Court that there is no legal basis to sustain the past procedures.

Dated this 19th day of July, 1972.

/s/ [Signature]
DISTRICT JUDGE

DUCHESNE RIVER CANAL TRANSMISSION LOSS STUDY

The transmission loss study was started in September of 1971.

A reconnaissance of the Duchesne River Drainage was made by Loryn Ross, Water Commissioner; Robert Guy, Area Engineer; and Donald Norseth, Distribution Engineer. During the reconnaissance of the area, the large number of canals traversing varying sediments and in varying conditions indicated the improbability of funding a study of each or the likelihood of obtaining measurements of each in time to be of value in current water distribution. It was decided to select canals that were representative of segments of the drainage, that results could be obtained soon enough to be of value.

The following canals were selected:

<u>Area</u>	<u>Canal</u>
Hanna	Rhoades Canal
River Bottoms near Duchesne	Pioneer Canal
Blue Bench	Rocky Point Canal
Lower Duchesne River	Grey Mountain Canal
Strawberry River	Raleigh-Ivie (Petersen) Ditch

Each canal was reviewed, and a reach of each was selected to be measured as follows:

Hanna Area: The Rhoades Canal was selected in this area. The

section of the canal selected was a 1.5-mile reach from the head of the canal to their present place of measurement. There are two six-foot parshall flumes at the top and bottom of this reach. The bottom flume has an eight-day Stevens recorder installed at this point. This canal heads about four miles west of Hanna. The canal runs around the hillside through glacial outwash and river worked material which is very rocky in the selected area.

The river bottoms: The Pioneer Canal was selected to represent this type of diversion. A 1.2-mile reach was selected near the Brady Ranch. There is a two-foot parshall flume at the head of this section and a two-foot parshall flume at the bottom. The lower parshall flume is located near the small orchard and stack-yard of the Brady Ranch. The reach transverses the bottom lands typical of the Duchesne area.

The Blue Bench: The canal picked to represent this area was the Rocky Point Canal. This canal starts in the river bottom and transverses the side of the hill and thence along the river floodplain. It is through very rocky gravel material. A 3.6-mile reach was set up from the canal heading to the bridge above the main road into Duchesne. It was not possible to select a reach from which the similar measurements could be obtained as in the others. Under agreement with the Utah State Geological Survey, they will measure and determine the seepage loss from this canal.

The Lower Duchesne: The Grey Mountain Canal was selected in this area. It is noted, however, that there was not a good reach in this area where a good seepage loss study could be conducted as there are too many turnouts. It was, therefore, decided under agreement with the Utah State Geological Survey to have them determine the seepage loss from this canal.

Strawberry River: The Raleigh-Ivie Ditch (Peterson Ditch) was selected to represent this area. An attempt was made to put a Cipoletti weir in the ditch near the heading; however, it was found that the weir served as a bulkhead and dammed off the ditch due to the lack of head. Further examination showed that there was a penstock box just below the heading and that the only area available for a seepage study was from this penstock box 0.4 mile downstream to the Castle Creek culvert where another penstock box was installed. The Raleigh-Ivie Ditch is a flat ditch through sandy, rocky clay material, heterogeneous and without pattern. It appears to be the best ditch on the Strawberry to obtain the necessary information, but it is a short section.

Difficulty was encountered in obtaining a long enough reach without turnouts to maintain reliable measurements. However, on the Rhoades Canal, two six-foot parshall flumes are being utilized. On the Pioneer Canal, two two-foot parshall flumes are being used. On the Raleigh-Ivie (Peterson) Canal, two penstock boxes of like

dimensions are being utilized. The Rocky Point Canal has a parshall flume in the top and a Price current meter is being used at the bottom point selected for the study. On the Grey Mountain Canal, there is a measuring device at the top with a Price current meter being used at the bridge downstream.

Canal seepage loss measurements were started in September and continued until the canals ceased diverting water. These measurements are not considered conclusive as to loss because of the lateness of the season and methods employed. However, they are considered indicative as to transmission loss. Correlated comparisons were also made with measurements of other agencies.

It is proposed in 1972 to continue to measure the selected canals, to spot check others, and to add any on which repeated measurements the study indicates would be advisable to enhance the transmission study.